PCT WORLD INTELLECTUAL PROPERTY ORGANIZATION
International Bureau

INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

(51) International Patent Classification 5 : G06F 15/22, 15/24 | A1

(11) International Publication Number: WO 93/24892

(43) International Publication Date: 9 December 1993 (09.12.93)

(21) International Application Number: PCT/US93/04733

(22) International Filing Date: 20 May 1993 (20.05.93)

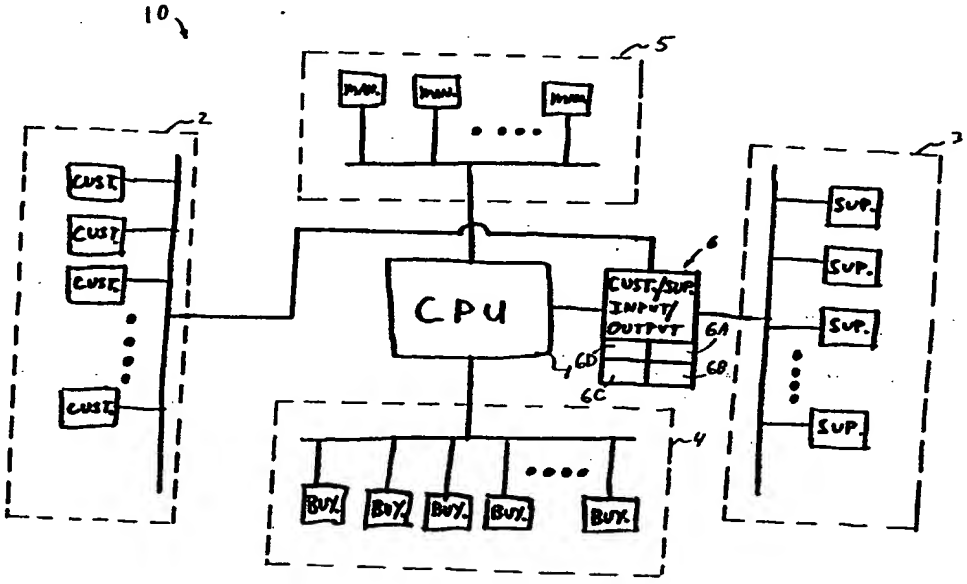
(30) Priority data:
07/886,772 21 May 1992 (21.05.92) US

(71)(72) Applicants and Inventors: ROUGHGARDEN, Edward, Craig [US/US]; 38 Ozone Avenue, Cedar Grove, NJ 07009 (US). PASCAL, Christian, D. [US/US]; 297 Highfield Lane, Nutley, NJ 07110 (US).

(81) Designated States: JP, European patent (AT, BE, CH, DE, DK, ES, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE).

Published
With international search report.
Before the expiration of the time limit for amending the claims and to be republished in the event of the receipt of amendments.

(54) Title: METHODS AND APPARATUS FOR QUOTE PROCESSING



(57) Abstract

Apparatus and method for processing quote requests for the procurement of goods and services is provided. The quote processing system (10) is capable of automatically processing quote requests for goods or services from a plurality of customers (2), and facilitates the identification of a plurality of potential suppliers (3) of the particular goods or services. The system (10) also automatically generates price request documents which can be sent to a selected number of the identified suppliers (3). After receiving responses to the price requests, the system can also generate a customer report which informs the customer (2) of the lowest price available for the goods or services requested.

BEST AVAILABLE COPY

FOR THE PURPOSES OF INFORMATION ONLY

Codes used to identify States party to the PCT on the front pages of pamphlets publishing international applications under the PCT.

AT	Austria	FR	France	MR	Mauritania
AU	Australia	GA	Gabon	MW	Malawi
BB	Barbados	GB	United Kingdom	NL	Netherlands
BE	Belgium	GN	Guinea	NO	Norway
BF	Burkina Faso	GR	Greece	NZ	New Zealand
BG	Bulgaria	HU	Hungary	PL	Poland
BJ	Benin	IE	Ireland	PT	Portugal
BR	Brazil	IT	Italy	RO	Romania
CA	Canada	JP	Japan	RU	Russian Federation
CF	Central African Republic	KP	Democratic People's Republic of Korea	SD	Sudan
CG	Congo			SE	Sweden
CH	Switzerland	KR	Republic of Korea	SK	Slovak Republic
CI	Côte d'Ivoire	KZ	Kazakhstan	SN	Senegal
CM	Cameroon	LI	Liechtenstein	SU	Soviet Union
CS	Czechoslovakia	LK	Sri Lanka	TD	Chad
CZ	Czech Republic	LU	Luxembourg	TG	Togo
DE	Germany	MC	Monaco	UA	Ukraine
DK	Denmark	MG	Madagascar	US	United States of America
ES	Spain	ML	Mali	VN	Viet Nam
FI	Finland	MN	Mongolia		

METHODS AND APPARATUS FOR QUOTE PROCESSING

Background Of The Invention

This invention relates to methods and apparatus for processing requests for quotes for the procurement of goods and services. More particularly, this invention relates to methods and apparatus for processing a plurality of quote requests, from a plurality of customers, and identifying a plurality of suppliers for each respective quote request.

The process of procurement of goods and services by businesses can be broken down into two separate and distinct phases. The first phase is a selection process whereby prospective suppliers (e.g., manufacturers, distributors, or other suppliers of goods or services) are invited to submit price and other information on specific goods and services required by prospective purchasers. The second phase is an ordering process which occurs after a particular supplier's goods or services have been selected.

Many companies have internal departments or personnel who have specific responsibility for carrying out the procurement process. Such individuals are known as "buyers," "purchasers," or "inside sales personnel" for the company. Third party companies may also perform the same functions as such "buyers," but

operate in situations where the prospective purchaser is a customer of the buyer, rather than the buyer's employer.

The job of the procurer involves the following tasks: 1) taking a quote request from a prospective goods or services purchaser (hereinafter referred to as "customer"); 2) researching each item listed on the customer's quote request and identifying one or more prospective suppliers of the particular goods or services requested; 3) preparing for each selected supplier a "Request for Price" document (hereinafter referred to as "Price Request") which requests pricing and other information from the supplier; 4) contacting the suppliers in order to invite them to submit a response to the Price Request (hereinafter referred to as "Price Request Response"); 5) collating information received back from the suppliers who have submitted a Price Request Response; and 6) compiling a "Response To Customer" report (hereinafter after referred to as "Customer Report") to be given back to the prospective purchaser (i.e., the customer).

The customer evaluates the Customer Report and makes a decision as to whether to purchase the goods or services based upon the information contained therein. Alternatively, the report may be used to estimate the cost of a particular project. If the customer is not the end user of the particular goods or services -- for example, if the customer is a supplier to another third party customer -- the report can be used by the customer to generate his own Price Request Response. Regardless of the purpose of the report, the processing of a quote request from the standpoint of the procurer is similar.

Referring in more detail to previously-known methods and apparatus for quote processing, the procurer would first receive from a customer a request for price and other information on a specific quantity of specific goods or services. This request is typically referred to as a "quote request." For the case of an exporting or importing company, the quote request is typically received via a facsimile or telex machine, or the mail.

After receiving the quote request, a manager of the procurer determines which of the procurer's buyers will be assigned to work on the quote. This decision is typically based on the particular type and quantity of goods and services involved and the scope of a particular buyer's experience.

After the manager decides which buyer will be assigned to work on the quote request, a photocopy machine is used to make copies of the quote request, one for the assigned buyer and a second for the central files. The manager then puts the buyer's copy of the quote request on the top of the buyer's stack of "incoming" quotes to be worked on.

At a later time, the buyer reads the quote request and determines how many different items need to be procured. Each item must be individually researched to determine manufacturer's part numbers, etc, the number of potential suppliers of the item, and sometimes stock availability. Heretofore, this step has been extremely time consuming.

Each item must then be grouped by potential suppliers using a process which is commonly referred to as "cut and paste," wherein a quote request with a plurality of items must be separated item by item (usually using a pair of scissors) so that only those items associated with a potential supplier are grouped

together. For each supplier, a Price Request is assembled by pasting individual items of the quotation onto a document. Alternatively, the Price Request could be assembled by re-typing individual items onto a particular supplier's Price Request.

Thereafter, individual suppliers must be contacted in order to invite them to submit a Price Request Response. Typically, this communication step occurs either by facsimile, telex, mail or telephone.

Generally, it is accepted practice to obtain a minimum of at least three bids for each item in a quote. As a result, a five item quote request might entail repeating the above process as many as fifteen times.

After a supplier evaluates the Price Request and decides to submit a Price Request Response, the supplier will then communicate the response by fax, telex, mail or the telephone.

Thereafter, the information in the supplier's response will be manually collated by the buyer and inserted into its respective file (i.e., the file associated with a particular quote). When the buyer has obtained the minimum required number of responses, he or she will evaluate the responses and prepare a Customer Report. The evaluation process used by the buyer involves criteria such as price, urgency, availability, location, or other special considerations. Fast and accurate decisions must be made at this point by the buyer in order to ensure that the Price Request Response does not expire or that the supplier does not run out of stock.

There are various disadvantages of the previously known methods and apparatus for the managing and processing of quotes for the procurement of goods and services. The time required to "cut and paste" is

excessive. The filing of requests for quotes, Price Requests, Price Request Responses, and Customer Reports, and photocopies thereof, can be tedious and expensive. Additionally, because of the large amounts of paper involved, the potential for losing such papers is great. Furthermore, the retrieval of information on filed papers can be difficult and expensive.

Also, sending a Price Request to a potential supplier can be a time consuming task. It requires a telephone call, or the transmission of a facsimile, a telex or a letter. For example, a facsimile or a telex can be time consuming because of the time required for the buyer to prepare the Price Request (either by "cut and paste" or by re-typing of the original quote) and the time required by the buyer to stand at a facsimile or telex machine while trying to make a connection to the supplier. And, when a Price Request or its corresponding response are given over the telephone, potential suppliers can contest a quoted price or delivery date once an order has been placed.

In addition to the above noted disadvantages, management has little or no control over the supplier selection process because all quote requests and Price Request Responses tend to be handled by the buyer directly. Sealed bids, which are a way around this problem, are tedious and expensive. Also, management has no readily available means of evaluating a particular buyer's performance. For example, it is difficult to determine how often a buyer places an order at the lowest price or whether there is a pattern of supplier preference.

It is also extremely difficult for a first buyer, who has experience with a particular item, to share with a second buyer information about the same particular item on which the second buyer is assigned

to work. For example, the second buyer may be unaware that the first buyer may know potential suppliers for the item and may even have corresponding price information. This creates duplication of effort and there is no guarantee that a supplier for the item will ever be found by the second buyer.

Because of the great number of documents involved, it is difficult to maintain a supplier rating mechanism. For example, it is difficult to determine the average amount of time it takes a particular supplier to respond to a Price Request. This type of information is critical if the customer has approached a number of different buyers and will place an order with the first reasonable price quote received. In particular, if the procurer is an importing or exporting company, response time may be crucial in obtaining an order.

Also, because there is no standard industry format for communicating quotations and Price Requests digitally between two unrelated parties (i.e., over a telephone line), quotation process heretofore has typically been slow.

If a large bill of materials or requirements list is being worked on, the complexity of evaluating a package deal increases geometrically with the number of items and potential suppliers. For example, a bill of materials with five hundred items on it may require the generation of over one thousand Price Requests.

Also, because staffing requirements are governed by the most difficult function -- i.e., the selection of bidders -- buyers must be hired who can perform that task. However, much of their time is used to "cut and paste" and file paper, instead of selecting bidders.

In light of the above, it would be desirable to provide improved apparatus and methods for processing quote requests for the procurement of goods and services.

It would also be desirable to provide apparatus and methods for efficiently processing such quote requests.

Summary Of The Invention

It is the object of this invention to provide improved apparatus and methods for processing quote requests for the procurement of goods and services.

It is also an object of this invention to provide apparatus and methods for efficiently processing such quote requests.

In accordance with this invention, there is provided a quote processing system including a programmed central processing unit for processing a customer request for a quote for the procurement of goods or services, where the quote request contains one or more quote items. The system includes: quote entry means for entering information regarding the customer quote requests, supplier identification means for identifying suppliers of the quote items, and means for generating requests for price from identified suppliers.

There is also provided a quote processing method using a programmed central processing unit for processing a customer request for a quote for the procurement of goods or services, the quote request containing one or more quote items. The method includes the steps of entering information regarding the customer quote request, identifying suppliers of the quote items, and generating requests for price from identified suppliers.

There is also provided a quote processing system for processing a plurality of requests for a quote for the procurement of goods or services, where each quote request contains one or more quote items. The system includes a plurality of programmed central processing units capable of communicating with each other. Each of the units includes: quote entry means for entering information regarding a quote request, supplier identification means for identifying suppliers of a quote item, and means for generating requests for price from identified suppliers.

Brief Description Of The Drawings

The above and other objects and advantages of the invention will be apparent upon consideration of the following detailed description, taken in conjunction with the accompanying drawings, in which like reference characters refer to like parts throughout, and in which:

FIG. 1 is a block diagram illustrating the quote processing system of the present invention;

FIGS. 2A and 2B are schematic flow charts depicting the quote processing methodology and structure in accordance with the principles of the present invention;

FIG. 3 is a schematic flow chart depicting in more detail the new quote request entry step represented by block 16 of FIG. 2A;

FIG. 4 is a schematic flow chart depicting in more detail the quote detail entry step represented by block 55 of FIG. 3;

FIG. 5 is a schematic flow chart depicting in more detail the quote assignment step represented by block 18 of FIG. 2A;

FIG. 6 is a schematic flow chart depicting in more detail the buyer worksheet step represented by block 20 of FIG. 2A;

FIG. 7 is a schematic flow chart depicting in more detail the response to customer step represented by block 81 of FIG. 6;

FIG. 8 is a schematic flow chart depicting in more detail the price request response input step represented by block 22 of FIG. 2A;

FIG. 9 is a schematic flow chart depicting in more detail the quote closeout step represented by block 24 of FIG. 2B;

FIG. 10 is a schematic flow chart depicting in more detail the document queue step represented by block 26 of FIG. 2B; and

FIG. 11 is a schematic flow chart depicting in more detail the table entry edit step represented by block 31 of FIG. 2B.

Detailed Description Of The Invention

A preferred embodiment of the quote processing system of the present invention is illustrated in FIG. 1. Quote processing system 10 includes central processing unit 1 in which one or more buyer workstations 4 and one or more manager workstations 5 are connected. Quotes from one or more customers 2 are entered into central processing unit 1 through customer-supplier input/output 6 unit, which is also used to allow central processing unit 1 to communicate with one or more suppliers 3. Customer-supplier input/output unit 6 includes keyboard/monitor 6A, printer 6B, facsimile unit 6C and modem 6D.

In accordance with the present invention, one or more new quote requests from a customer, with their corresponding part numbers, descriptions, quantities,

delivery dates and other information, are entered into central processing unit 1 through customer-supplier input/output unit 6. The quotes can be entered directly by a customer, through modem 6D, who is capable of transmitting, via a telephone line and modem, a compatible quote request data file, or can be entered by a data entry clerk, through keyboard/monitor 6A, who has the necessary information to enter the quotes (e.g., photocopies of the quote requests received from the customer via a facsimile or telex machine or by the mail).

After one or more new quote requests are entered into the system, a manager directly accesses the system central processing unit 1 in order to assign the quote requests to one or more buyers. In accordance with the present invention, the system indicates to the manager which quote requests are unassigned and which buyers are available for assignment. Based upon this information, the manager evaluates unassigned quote requests and assigns them to particular buyers.

In accordance with the present invention, each buyer has a respective buyer "worksheet" on the system which contains those quotes assigned to the buyer. A buyer who has been assigned a new quote is able to research the quote at his or her workstation by employing the quote database of the system. The system is capable of automatically indicating to the buyer one or more potential suppliers for each item in the quote request, so that the buyer does not have to manually research the items contained in the quote request in order to prepare Price Requests. Additionally, the system is capable of indicating particular detailed information about an item in the quote request (such as part number, manufacturer, description, quantity and

unit of measure), if the buyer is not familiar with the item.

The above-described features of the present invention, which allow the buyer to perform his or her task without leaving the workstation, result in an efficient method for processing quote requests, allowing the buyer to process more quotes in a given time period than would otherwise be possible. The present invention achieves this result for several reasons.

First, the buyer less often needs to refer manually to reference catalogs or confer with other buyers in order to determine what a particular part number in a quote request corresponds to -- central processing unit 1 contains that information.

Second, the buyer less often needs to manually determine potential suppliers for a given item on a quote -- the central processing unit also contains this information. In addition, the central processing unit contains other information which the buyer can use to rapidly obtain detailed information about the prior history of a particular supplier of an item. For example, the buyer can determine all prior times a particular item was ever included in a Price Request by any other buyer on the system. As a result, the buyer can estimate whether and when a particular supplier will respond to a particular Price Request. The buyer can also determine prices previously quoted by a particular supplier for a particular item. This information, which heretofore was difficult for individual buyers to obtain for a particular item, can be used by the buyer to prepare a group of Price Requests for a particular item which will have a higher supplier response ratio, with lower average price

quotes, because the buyer is aware of prior quote history -- which central processing unit 1 supplies.

In addition to the above information, central processing unit 1 also maintains other information regarding equivalent or substitute parts for a given particular part number. For example, if a customer requests a quote on a particular part number, central processing unit 1 can provide a list of other part numbers which correspond to a substitute or equivalent part. This feature of the present invention is especially useful if a customer requests a quote on a particular part that is no longer manufactured or available. For such a case, central processing unit 1 can supply a buyer with alternative part numbers so that the buyer can efficiently fulfill the needs of a customer.

The system thus generates Price Requests without the need for the buyer to "cut and paste" or re-type a quote request, as has heretofore been standard practice. The system can also automatically send the Price Request to the corresponding suppliers, via facsimile unit 6D, including a facsimile converter and transmission unit (commonly referred to as a "fax board"), connected to central processing unit 1, without the need for first generating a printout to be fed into an independent facsimile machine. Additionally, it is also possible for the system to communicate with a supplier's compatible system, using modem 6C and a telephone line, so that a data file containing the Price Request information can be directly sent to the supplier without the need for supplier to process a written facsimile document. In the alternative, the system can generate a printout, through printer 6B, which is sent to the supplier via some other method (e.g., the mail).

Modem 6D of customer-supplier input/output unit 6 discussed above allows a supplier to automatically respond to the Price Request via a telephone line and modem so that a data file containing the Price Request Response information can be directly sent back to the buyer without the need for supplier generate a written facsimile document. This feature of the present invention eliminates the need for the supplier to provide a written response and also eliminates the need for information contained in that response to be manually retyped into the system by data entry personnel. In the alternative, Price Request Responses can be entered into the system through keyboard/monitor 6A of customer-supplier input/output unit 6.

After one or more Price Request Responses are entered into the system, a buyer's worksheet is updated to include the information (e.g., quoted price, delivery date and deliverable quantity) contained in the response so that the buyer can rapidly prepare a Customer Report. In accordance with the present invention, the system allows the buyer to individually evaluate each supplier's response and also automatically provides a list of all supplier responses in order of increasing price. This feature of the present invention facilitates rapid generation of a Customer Report. As with Price Requests, Customer Reports can also be automatically sent to the customer using automated facsimile unit 6C or modem 6D, or in the alternative, can be printed on printer 6B.

After the customer evaluates the Customer Report and contacts the buyer, the system allows the buyer to select particular items from the report to be ordered and an order worksheet is automatically generated to facilitate the ordering process.

The system also allows the buyer to remove quote requests from his or her active worksheet, whether the items are included in a Customer Report or not, or if included, whether the items were ordered or not, into the system database for future reference and use by the system. This feature of the present invention allows one buyer's work to be easily employed by any other buyer on the system.

As discussed above, the system shown in FIG. 1 is capable of receiving a data file over a telephone line, through modem 6D, which contains information regarding either a quote request or a Price Request Response. Additionally, the system is capable of transmitting to a supplier a data file, also through modem 6D, which contains information regarding a Price Request. These features of the present provide for an efficient quote processing system which reduces the need for the generation of written documents.

Additionally, the system allows unrelated parties (e.g., buyers and suppliers, or customers and buyers in the case of, for example, importing or exporting companies) to directly and efficiently communicate with each other, via respective central processing units. This feature of the present invention allows a customer, who may want quotes on a large number of projects (where each project may entail a large quantity of items), to directly send a data file containing such information to many different procurers without having to separately handle each group of quote requests for each procurer. Correspondingly, each procurer also does not have to separately handle the wide variety of quote requests, because a manager using the central processing system of the present invention is able to assign the work to respective buyers. An additional feature of the

present invention is that the manager could, in the alternative, send either all or part of the data file received from the customer, to a third party procurer who then performs the work that the manager's buyers would have performed. In such a case, the manager would be a "customer" to the third party procurer. Heretofore, such transactions, without using the present network of central processing units, would not only have been time consuming, but costly due to the amount of labor and resources involved.

With the foregoing overview in mind, the detailed operation of the system can best be understood by referring to FIGS. 2-11, which depict the quote processing methodology and structure in accordance with the principles of the present invention.

Referring to FIG. 2A, the process begins at step 12 with the login sequence. For security purposes the system requires the entry of a user identification and a user password. At test 13, the system tests to see if the login process was successful. If at test 13 the login process is unsuccessful, the system terminates the process at step 14.

During the login sequence each user is assigned a specific security access level, wherein a level one is the highest level of security and a level five is the lowest. Managers, salespersons, buyers, clerks and data entry personnel are assigned levels one, two, three, four and five, respectively. Other than a level-one user, who can access all operations of the system, the level assigned to a particular user determines which operations in the system that user is allowed to access. This feature of the present system will be discussed in more detail below.

If at test 13 login is successful, then the system proceeds to test 15 where it is determined

whether or not there are any quote requests to process. If so, one or more new quote requests would be entered into the system at new quote entry step 16. Referring to FIG. 3, new quote entry step 16 begins at test 40, where the system determines whether the incoming quotation is from a customer who has a modem that is capable of transmitting a quotation file compatible with the system. If so, the system proceeds to test 41 were it is determined whether the complete transmitted quotation file was received by central processing unit 1 (FIG. 1). If at test 41 the answer is no, the system loops back to test 41 until the complete file has been transmitted.

When the answer to test 41 becomes yes, the system proceeds to test 43 were it is determined if all records (which correspond to individual quote requests) have been imported into the quotation database file. If at test 43 all records have not been imported, the system goes to step 52 (FIG. 3), where the next available quotation number is assigned to a non-imported quotation. After a quotation number has been assigned, then at step 53 the new record is inserted into the quote database file. The system then returns to test 40 where the above process is repeated until all records have been assigned a quotation number and imported into the quote database file. At this point the system returns to test 17 (FIG. 2A).

If at test 40, the customer is not capable of transmitting a compatible quote request file, then the quote request would be received via a facsimile or telex machine, the mail or the telephone. Under these conditions, the quote must be entered into the quotation database file manually via a user keyboard. This occurs at step 44, where existing quote requests

which are presently entered into the system are displayed on the monitor.

The system then proceeds to test 45, where it is determined whether or not the user wants to exit step 16. If not, then the system proceeds to test 46 where it is determined whether the user desires to manually enter a new quote request. (At this point, a user could in the alternative choose to edit an existing quote request through step 49.) If a user desires to enter a new quote request, step 47 sets the new quote flag to ON and the system proceeds to step 48. At step 48, the user enters quote request summary information for the new quote request. Quote request summary information includes, for example, the name of the customer, the customer's internal reference number, the date the quote request was received, the subject matter of the quote request, and the name of the person who sent the quote request. If, at test 46, the user did not want to enter a new quote request, then at step 49 the user selects an existing quote to edit and the system proceeds to step 48. Next, the system proceeds to test 50 where it is determined whether or not the user wants to save the entered data. If not, the system proceeds to test 54 where the system determines whether or not the user wants to exit step 16. If at test 54 the system determines that the user does not want to exit, the system proceeds to step 55.

The detailed items for new quote requests are entered into the quote database through quote detail entry step 55 (FIG. 4). Quote detail entry step 55 begins at step 57 where all existing detailed items are displayed in a list on the monitor. For new quotes, as opposed to quotes which are being edited, there are no "existing" detailed items at this point. Detailed items of the quote include, for example: 1) part

number, 2) manufacturer, 3) description, 4) quantity, and 5) unit of measure. If the quote contains a plurality of quote items, then associated with each quote and its corresponding quote summary information, will be a plurality of detailed items for each quote item.

After the detailed items are displayed, the system proceeds to test 58, where it is determined whether or not the user wants to exit step 55. If so, the system returns to test 50. If not, the system proceeds to test 59 where it is determined whether or not the user wants to enter a new detailed item. If so, the system proceeds to step 59B where the user begins to enter a new detail item into the system. For each new quote item, its corresponding part number is normally first entered into the system by the user. In accordance with the present invention, as each part number is entered into the system, the system searches (at step 59B) a database file containing a master list of part numbers. This master list contains for each part number entry a corresponding supplier, a part description and other information. When the system identifies a match in part numbers, or a part number which is different by a few characters, the user has the ability to copy the information contained in the master list for the corresponding part number. This feature of the present invention reduces mistakes and speeds data entry so the user does not have to enter all parameters associated with a particular part number.

After detail information is entered at step 59B, the system returns to step 57 where the updated detailed items are displayed on the monitor. The system then proceeds to test 58 where it is determined whether or not the user wants to exit step 55. If yes,

the system returns to test 50. If no, the system proceeds to test 59 where the above steps are repeated for as many detailed items as user desires to enter. Once the displayed existing detailed items are accurate and sufficient, then the user can exit quote detail entry step 55 at test 58 and return to test 50.

If at test 59 the system determines that the user does not want to enter a new detail item but wants to edit an existing one, the system first proceeds to step 59A before it proceeds to step 59B discussed above. At step 59B, the user selects the detailed item he or she wants to edit. The system repeats the above process (test 59 and steps 59A and 59B) until the system determines that the user wants to exit step 55 at test 58.

When the system returns to test 50, the system determines again whether the user wants to save the entered data. If so, then the system proceeds to test 51 where the system determines whether or not new quote entry flag is ON.

If new quote entry flag is not ON (i.e., the user did not want to enter a new quote request but edit an existing quote request at test 46), the system proceeds to step 56 where the system updates the records in the system. After updating the records, the system returns to test 40.

If new quote entry flag was ON at test 51 (i.e., the user did want to enter a new quote request at test 46), the system proceeds at step 52 to assign the next available quote number to the new quote request that was entered. After assigning a quote number, the system proceeds to step 53 where the records corresponding to the new quote request are inserted into the systems files. After the records for the quote are inserted, the system returns to test 40.

The above new quote entry process (step 16) is repeated until the system determines that the user wants to exit step 16 at test 45, where the system then returns to test 15. And again determines whether the user wants to enter new quotes. If yes, the system proceeds to step 16 as discussed above. In no, the system proceeds to test 17 (discussed below).

After all new quote requests are entered into the database, a user with a high security level (e.g., a manager) will need to assign them to the respective buyers to work on (test 17, FIG. 2A). Referring to FIG. 5, quote assignment step 18 begins at step 60 where all unassigned quotes are first displayed on the monitor. The system then proceeds to step 61 where it is determined whether or not the user wants to exit step 18. If not, the system proceeds to test 62 where the system determines whether the user is finished marking quote requests for assignment. If not, the system proceeds to step 64 where the user can mark a quote to be assigned. After marking a quote, the system returns to step 60.

If at test 62 it is determined that the user is finished marking quotes, the system proceeds to step 63 where a list of buyers will be displayed. The system then proceeds to test 65 where it is determined whether or not the user wants to exit. If so, the system returns to step 60. If not, the system proceeds to step 66 where the user can select a buyer for the marked quote requests. After selecting a buyer, the system proceeds to step 67 where the marked quote requests are assigned to the selected buyer. The system then proceeds to step 68 where marked quote requests are then removed from the displayed list. The system then returns to step 60 where the above assignment process will continue until the system

determines that the user wants to exit step 18 at test 61.

After quotes are assigned to respective buyers, it is up to the buyer to enter the system to determine if there is any work to perform in the buyer worksheet. Referring to FIG. 6, buyer worksheet step 20 begins at step 70 where the quote requests assigned to the buyer are displayed in a list. New quote requests are indicated to the buyer on the worksheet quote list with a "NEW" label, whereas quote requests having new response activity since last viewed are labelled with a plus sign "+". The only quotes that will be displayed on this list are quotes assigned to the logged in user, or all quotes, if the logged in user has an access level of one.

After displaying a buyer's list of quotes, the system proceeds to test 71 where it is determined whether the user wants to exit step 20. If so, the system returns to test 15. If not, the system proceeds to step 72 where the buyer can select a quote to process. After a quote is selected, the system then displays it's corresponding detail items at step 73. The system then proceeds to test 74 where it is determined whether the user wants to exit. If so, the system returns to step 70. If not, the system proceeds to step 75.

At step 75, the buyer marks an individual item and the system then proceeds to test 76 where it is determined whether the user is finished marking items. If not, the system returns to step 73 where the user can mark additional item if desired. When the user is finished marking items, the system proceeds to test 77 where it is determined whether the user has marked multiple items.

If the user has marked multiple items, the system proceeds to step 82 where a list of all potential suppliers in the database is displayed and the buyer selects a supplier. After a supplier is selected, the system proceeds to step 82 where the system creates a Price Request (i.e., a request for price (RFP)). All marked items are incorporated into the Price Request. Each Price Request is assigned a unique Price Request number that is an internal tracking number so that the buyer can match responses (when received) with Price Request's. It is also used internally as the electronic tracking number for those potential suppliers who employ a compatible system having a central processing unit that sends Price Request Responses back to the buyer via modem 6D and a telephone line.

The process of mixing and matching items with suppliers and creating Price Request's continues until the buyer is satisfied that the buyer will receive adequate responses. After creating Price Request's, the system sends them to the queue to await printing or facsimile transmission (to be discussed below) to their corresponding suppliers. The system also allows a data file containing Price Request information to be sent, via a telephone line and modem 6D, directly to suppliers (to be discussed below). The system then proceeds to step 84 where the system clears the marks from the worksheet quote list which the buyer placed adjacent items in order to process them. The system then returns to step 73.

After each Price Request is created the system also updates a master Price Request database file which, for each corresponding Price Request number, has a price request summary field (including its corresponding quote request number) and detail item

fields similar to the quote request database file. The detail item fields includes such items as part number, supplier/manufacturer, and a comment section. Also included in the detail item fields is a section corresponding to price, quantity, and delivery date to be updated when and if the supplier returns a Price Request Response.

While the system awaits responses to the Price Requests from suppliers, the quote is marked with a status of "RP" (indicating requests for price have been prepared) and the "RP"'s will be labelled as "WAITING" (indicating the system is waiting for a response). Correspondingly, the worksheet screen also puts a question mark ("?") at the beginning of each supplier name to indicate the system is waiting for a response. Suppliers who have responded to a Price Request are marked with an asterisk ("*") so that buyers are aware when responses come in.

During the process of matching suppliers with items, the buyer may not know what the item is, or what potential suppliers a Price Request can be sent to. The buyer can search quote and purchase history to help make that determination by marking only a single item. If the system determines that only a single item was marked at test 77, the system proceeds to step 78, where the system selects that item for further processing. The system proceeds to test 79 where it is determined whether the user knows the item selected. If not, the system searches a master part number database which is used to provide potential suppliers for particular items. The system can search this database by part number. The database includes such information as: 1) quote request numbers that have specified the part, 2) Price Request numbers that have specified the part, 3) purchase order numbers if the

part was ever ordered by a customer, and 4) information regarding prices and quantities. This feature of the present invention allows the user to determine whether the part was ever quoted before, or purchased at some other time, by the same or any other buyer. If it was, the supplier information such as previous price, delivery terms and quantity, can be displayed. The buyer will then be able to assign the proper supplier to the item in order to create a Price Request.

After the single items quote and purchase history has been searched, the system proceeds to test 86 where the system determines whether the user wants to search the item cross-reference database. The cross-reference database contains a list of substitute or equivalent parts for the selected item. This feature of the present invention is especially useful if a customer requests a quote on a particular item that is no longer manufactured or available. Or if a buyer simply wants to expand on the number of potential suppliers which would equivalently fulfill the needs of a customer. If the system determines that the user wants to search the item cross-reference database, the system proceeds to step 87 where the a list of equivalent or substitute items are displayed on the monitor. The system then returns to step 73 described above. If at test 86 the system determined that the user did not want to search the item cross-reference database, the system returns directly to step 73.

At test 79, if the system determines that the user does know the item selected at step 78, the system proceeds to step 81 (FIG. 7). Step 81 begins at test 90 where the system determines if the user wants to assign a supplier to the item. If so, the system proceeds to step 82, as described above, where Price Requests are created. If at test 90 the user does not

want to assign a supplier to the item,, the system proceeds to test 91 where the system determines if there are any corresponding supplier Price Request Responses.

In order for the system to determine that there are Price Request Responses at test 91, they must first enter the system. Price Request Responses are entered into the system through price request response input step 22 (FIG. 8). Referring to FIG. 8, response input step 22 begins at step 101 where the system determines whether the incoming response is from a supplier who has a modem that is capable of transmitting a response file compatible with the system. If so, the system proceeds to test 102 were it is determined whether the complete transmitted response file was received by central processing unit 1 through modem 6D (FIG. 1). If at test 102 the answer is no, the system loops back to test 102 until the complete file has been transmitted.

When the answer to test 102 becomes yes, the system proceeds to step 104 where the system reads a record corresponding to a particular response and imports it into system. The system then proceeds to test 105 where it is determined whether all records have been read and imported into the system. If not, the system returns to step 104 and repeats the above steps. After all records have been imported, the system exits step 22 and returns to test 15.

If at step 101 the system determines that the incoming response is not from a supplier who has a modem that is capable of transmitting a response file compatible with the system, the system proceeds to step 106 where responses are entered manually into the system. At step 106, the system first displays are presently existing responses on the monitor. The

system then proceeds to test 107 where the system determines whether the user wants to exit step 22. If yes, the system returns to test 15. If no, the system proceeds to step 108 where the supplier transmits the response via a facsimile machine, mail, telex or telephone.

After a user (e.g., a data entry clerk) obtains the information contained in the response, the system proceeds to step 109 where the user selects the Price Request (i.e., the request for price RFP) corresponding to the response which is to be entered into the system. The system then proceeds to step 110 where the user enters the response (e.g., price, quantity and delivery date) into the system via a keyboard.

After the response is entered into the system, the system returns to step 106 where the above steps are repeated if multiple responses are to be entered into the system. The system returns to test 15 when it is determined at test 107 that the user wants to exit step 22.

If there are responses that were entered into the system according to the above steps, then when the system proceeds from test 90 to test 91 (FIG. 7), as described above, it will further proceed to step 92 where they will be displayed by the system on the monitor in order of lowest price first. The user (e.g., a buyer) can then evaluate the responses. After evaluation by the user, the system proceeds to test 93 where it is determined whether or not the user considers them to be acceptable for incorporation into a Customer Report. If not, the system returns to step 73, as described above, where the buyer may decide to wait for further responses to other Price Requests or to create more Price Requests (step 83).

If at test 93 the buyer determines the response to be acceptable, the system proceeds to step 94 where a Customer Report (i.e., a response to customer RTC) is prepared. This report includes information such as price (which can be marked up if, for example, the procurer is an importing or exporting company), delivery dates, quantity, units of measure, and comments to the customer.

After creating Customer Reports, the system sends them to the queue to await printing at printer 6B or faxing to the customer through facsimile unit 6C (to be discussed below). On large quotes, the buyer can chose to send only new responses to the customer and not all responses. As will be discussed in more detail below, Customer Reports can also be sent to the customer via modem 6D.

After a Customer Report is sent to a customer, final action is taken on the respective quotes after the customer contacts the buyer. This step is referred to herein as "closeout" (test 23 and step 24 of FIG. 2B). Closeout occurs when either a quote request becomes an order or it is decided that it will never become an order so that it needs to be moved into the history files of the system. Referring to FIG. 9, closeout begins at step 111 where the system displays a list of the active quote requests. The system then proceeds to test 112 where it is determined whether or not the user wants to exit the step. If so, the system returns to test 15. If at test 112 it is determined that the user does not want to exit the step, the system proceeds to step 113 where the user selects the quote to closeout.

After a quote request is selected, the system proceeds to test 114 where it is determined whether the quote request has become an order. If not, the system

skips to step 118 where the quote is purged from the current and active database and is moved to the history files of the system. Although the quote request is purged and moved to the history files, there is a facility to reinstate the purged quote in order to make it active once again. Quote request history is always accessible even for quotes closed out.

If at test 114 the quote request has become an order, the system proceeds to step 115 where the user selects the details of items that were ordered. The system then proceeds to step 116 where the user updates any of the existing quote data to match the actual order (e.g., quantity, delivery, price). After the order information is updated, the system proceeds to step 117 where an order worksheet, which contains information necessary to place an order, is created and the order worksheet is then sent to the queue for later printing (to be discussed below). The system then proceeds to step 118 where the quote request is purged from the current and active database and moved to the history files of the system.

Throughout the system whenever a Price Request, Customer Report, or an Order Worksheet is generated, it is entered into a queue wherein a user can then generate a "document" through test 25 and the document generation step 26 (FIG. 10). The queue is a waiting list of documents that have been generated by the system but not transmitted or printed yet. Referring to FIG. 10, the system first displays the list of documents on the queue list at step 120 in the order in which the queue received them. The system then proceeds to test 121 where the system determines whether or not the user wants to exit the step. If so, the system returns to test 15. If not, the system proceeds to step 112 where the user marks the item

(i.e., the "document") that he or she wants to take action on. The system then proceeds to test 123 where it is determined whether the user is finished marking items. If not, the system returns to step 122 for further marking. If so, the system proceeds to test 124.

At test 124, the system determines whether the user wants to print the marked items on printer 6B attached to central processing unit 1. If so, the system proceeds to step 125 where the system sends the items to printer 6B. If the user does not want to print the marked items at test 124, the system proceeds to test 126 where the system determines whether or not the user wants to transmit the marked items the marked items via facsimile unit 6C. If not, the system proceeds to test 128 without printing or facsimile transmitting the marked items.

If the user wants to transmit the marked items by facsimile unit 6C at test 126, the system proceeds to step 127 where the system automatically transmits the marked items via facsimile unit 6C. In accordance with the present invention, the automated facsimile transmission process uses a facsimile board including a facsimile converter and transmission unit. The automated facsimile process systematically calls the addressee phone number of the marked items and transmits the generated document. After the marked items have been transmitted, the system proceeds to test 128.

At test 128, the system determines whether or not the user wants to delete the marked items from the queue list. If not, the system returns to step 120. If so, the system first proceeds to step 129, where the marked items are removed from the queue, before returning to step 120. The system exits step 26 at

test 121 when the user does not want to print or transmit any more items.

In addition to the above process for generating "documents" through document generation step 26 (FIG. 10), the system also allows a user to automatically transmit a data file (containing, for example, a Price Request or Customer Report) directly over a telephone line via modem 6D. Referring to FIG. 2B, at test 27 the system determines whether or not the user wants to transmit a data file using modem 6D. If so, the system proceeds to step 28 where the user selects which data files are to be transmitted and the system automatically transmits the files using modem 6D. If at test 27 the user does not want to transmit a data file, the system proceeds to test 29.

Throughout each step of the system and from test 29 (FIG. 2B), whenever a data element resides in a table file (e.g., a record containing information about a particular supplier such as address and telephone number), a recursive Table Entry Edit step (step 31, FIG. 2B) is executed to manipulate the corresponding data element's table file. The step is recursive because the step will call itself, multiple times if required, to fulfill a request to edit a data element that resides in a table. The system proceeds to step 31 after the system determines that a user wants to edit a table at test 29 and the user selects which table to edit at step 30.

Referring to FIG. 11, the system begins at step 130 where the system displays the table record. The system then proceeds to test 131 where the system determines whether or not the user wants to exit the step. If so, the system returns to test 15. If not, the system proceeds to test 133 where the system determines whether the table entry is new or not. If

the table entry is new, step 134 sets the new entry flag to ON and the system proceeds to step 136. If the table entry was not new at test 133, the system proceeds to step 135 where the user selects a particular record to edit. After selecting a record, the system proceeds to step 136. At step 136, the user edits the selected record. The system then proceeds to test 137.

At test 137, the system determines if the data element is a new table entry. If not, the system proceeds to test 140. If so, the system proceeds to test 138 where the system determines whether or not the user wants to add it to a table. If not, the system proceeds to test 140. If so, the system proceeds to step 139 where the system recursively calls table entry edit step 29 and repeats the above steps starting at step 130.

At test 140, the system determines whether or not the user wants to save the edited data. If no, the system returns to step 130. If yes, the system proceeds to test 141 where it is determined if new entry flag is on. If yes, the system proceeds to step 142 where the new entry is inserted into a table record and the system returns to step 130. If no, the system proceeds to step 143 where the entry is used to update an existing table record. The system then returns to step 130.

When Table Entry Edit step 31 is exited at test 131, it will return at step 132 to its calling point at either step 31 (where the system will proceed to test 32), or step 139 if it was called by itself. When step 31 is exited, the system proceeds to test 32 where the system determines whether or not the user wants to exit the overall system. If not, the system returns to test 15 where the above-described steps are

repeated. If so, the system terminates the process at step 33.

It will be apparent that although the above method and apparatus has been described with reference to FIG. 1, wherein the customers (identified by reference character 2) and suppliers (identified by reference character 3) are shown to be distinct, this does not have to be the case. For example, a person or entity who is a "customer" with respect to particular goods or services, can be a "supplier" with respect to others. Thus, although FIG. 1 shows customers 2 and suppliers 3 as being distinct entities, that is not necessarily the case. Similarly, although FIG. 1 shows buyer workstations 4 and manager workstations 5 as being distinct, this does not have to be the case.

Additionally, although the above method and apparatus has been described with reference to FIG. 1 which includes central processing unit 1 programmed in accordance to the methodology depicted in FIGS. 2-11, the present invention also includes a magnetic recording medium for use with central processing unit 1. The magnetic recording medium of the present invention includes a plurality of magnetized regions each having an associated magnetic moment that is capable of being selectively orientated in either of two substantially opposite directions. The plurality of magnetized regions of the present invention are coded, using conventional techniques, to store program code containing instructions for operating the system in accordance with the methodology depicted in FIGS. 2-11.

Thus, a quote processing system has been described which is capable of automatically processing quote requests for goods or services from a plurality of customers, and which facilitates the identification

of a plurality of potential suppliers of the particular goods or services. The system also automatically generates price request documents which can be sent to a selected number of the identified suppliers. After receiving responses to the price requests, the system can also generate a customer report which informs the customer of the lowest price available for the goods or services requested.

One skilled in the art will appreciate that the present invention can be practiced by other than the described embodiments, which are presented for purposes of illustration and not of limitation, and the present invention is limited only by the claims which follow.

WHAT IS CLAIMED IS:

1. A quote processing system including a programmed central processing unit for processing a customer request for a quote for the procurement of goods or services, the quote request containing one or more quote items, said system comprising:

quote entry means for entering information regarding the customer quote request;

supplier identification means for identifying suppliers of the quote items; and

means for generating requests for price from identified suppliers.

2. The system of claim 1, further comprising assigning means for assigning the quote to a buyer.

3. The system of claim 2, further comprising means for sending each request for price to a respective supplier.

4. The system of claim 3, further comprising:

means for receiving a response to the request for price from a supplier;

means for evaluating the response to the request for price; and

means for generating a customer report.

5. The system of claim 4, further comprising means for generating an order worksheet.

6. The system of claim 1, wherein said quote entry means comprises a receiving unit adapted

for receiving a data file containing the information regarding the customer's quote, the file supplied by the customer.

7. The system of claim 6, wherein said unit comprises a modem adapted for receiving the file over a telephone line by the customer.

8. The system of claim 1, wherein said quote entry means comprises a monitor and keyboard both coupled to said central processing unit.

9. The system of claim 2, wherein the assigning means comprises a monitor and keyboard both coupled to said central processing unit.

10. The system of claim 2, wherein said means for identifying suppliers of the quote items comprises a database containing prior request for price data for one or more of the quote items.

11. The system of claim 2, wherein said means for generating a request for price comprises a printer coupled to said central processing unit.

12. The system of claim 3, wherein said means for sending said request for price comprises an automated facsimile conversion and transmission unit coupled to said central processing unit, wherein a facsimile containing the request for price information is capable of being directly sent to the supplier without the need for first producing a written document and then feeding an independent facsimile machine.

13. The system of claim 3, wherein said means for sending said request for price comprises an automated modem unit coupled to said central processing unit, wherein a data file containing the request for price information is capable of being directly sent to the supplier without the need for first producing a written document.

14. A quote processing system including a first programmed central processing unit for processing a customer request for a quote for the procurement of goods or services, the quote request containing one or more quote items, said system comprising:

means for receiving a request for price, said request for price being generated by a second central processing unit;

means for generating a response to the request for price; and

means for sending the response to a user of the second central processing unit.

15. The system of claim 14, wherein said means for receiving a request for price comprises a unit adapted for receiving a data file containing the request for price information regarding the customer's quote, the file generated by the second central processing unit.

16. The system of claim 15, wherein said unit comprises a modem adapted for receiving the file over a telephone line.

17. A quote processing system including a first programmed central processing unit for processing a customer request for quote for the procurement of

goods or services, the quote request containing one or more quote items, said system comprising:

means for generating said customer quote request on said first programmed central processing unit; and

means for sending said request to a second central processing unit for processing.

18. The system of claim 17, wherein said means for sending said request comprises a unit adapted for sending a data file containing the information regarding the customer's quote, the file generated by the first programmed central processing unit.

19. The system of claim 18, wherein said unit comprises a modem adapted for sending the file over a telephone line.

20. The system of claim 17, further comprising means for receiving a customer report, said report being generated by said second central processing unit.

21. A quote processing method using a programmed central processing unit for processing a customer request for a quote for the procurement of goods or services, the quote request containing one or more quote items, said method comprising the steps of:

entering information regarding the customer quote request;

identifying suppliers of the quote items; and

generating requests for price from identified suppliers.

22. The method of claim 21, further comprising the step of assigning the quote to a buyer.

23. The method of claim 22, further comprising the step of sending each request for price to a respective supplier.

24. The method of claim 23, further comprising the steps of:

receiving a response to a request for price from a supplier;

evaluating the response to the request for price; and

generating a customer report.

25. The method of claim 24, further comprising the step of generating an order worksheet.

26. The method of claim 21, wherein entering said information comprises receiving a data file containing the information regarding the customer's quote, the file supplied by the customer.

27. The method of claim 26, wherein the file is sent over a telephone line by the customer.

28. The method of claim 21, wherein the information is entered with a monitor and keyboard both coupled to said central processing unit.

29. The method of claim 22, wherein the quotes are assigned with a monitor and keyboard both coupled to said central processing unit.

30. The method of claim 22, wherein the suppliers are identifying using a database containing prior request for price data for one or more of the quote items.

31. The method of claim 22, wherein the requests for price are generated with a printer coupled to said central processing unit.

32. The method of claim 23, wherein the requests for price are sent with an automated facsimile conversion and transmission unit coupled to said central processing unit, wherein a facsimile containing the request for price information is capable of being directly sent to the supplier without the need for first producing a written document and then feeding an independent facsimile machine.

33. The method of claim 23, wherein the requests for price are sent with an automated modem unit coupled to said central processing unit, wherein a data file containing the request for price information is capable of being directly sent to the supplier without the need for first producing a written document.

34. A quote processing method using a first programmed central processing unit for processing a customer request for a quote for the procurement of goods or services, the quote request containing one or more quote items, said method comprising the step of:

receiving a request for price, said request for price being generated by a second central processing unit;

generating a response to the request for price; and

sending the response to a user of the second central processing unit.

35. The method of claim 34, wherein the requests for price are received with a receiving unit adapted for receiving a data file containing the request for price information regarding the customer's quote, the file generated by the second central processing unit.

36. The method of claim 35, wherein the receiving unit comprises a modem adapted for receiving the file over a telephone line.

37. A quote processing method using a first programmed central processing unit for processing a customer request for quote for the procurement of goods or services, the quote request containing one or more quote items, said method comprising the steps of:

generating said customer quote request on said first programmed central processing unit; and

sending said request to a second central processing unit for processing.

38. The method of claim 37, wherein the requests are sent with a unit adapted for sending a data file containing the information regarding the customer's quote, the file generated by the first programmed central processing unit.

39. The method of claim 38, wherein the unit is a modem adapted for sending the file over a telephone line.

40. The method of claim 37, further comprising the step of receiving a customer report, said report being generated by said second central processing unit.

41. A magnetic recording medium having a plurality of magnetized regions, said regions each having an associated magnetic moment that is capable of being selectively orientated in either of two substantially opposite directions, the magnetized regions being coded to store program code, said program code comprising instructions for:

entering information regarding the customer quote request;

identifying suppliers of the quote items; and

generating requests for price from identified suppliers.

42. The magnetic recording medium of claim 41, wherein said program code comprises instructions for assigning the quote to a buyer.

43. The magnetic recording medium of claim 41, wherein said program code comprises instructions for sending each request for price to a respective supplier.

44. The magnetic recording medium of claim 42, wherein said program code comprises instructions for:

receiving a response to the request for price from a supplier;

evaluating the response to the request for price; and

generating a customer report.

45. The magnetic recording medium of claim 43, wherein said program code comprises instructions generating an order worksheet.

46. A quote processing system for processing a plurality of requests for a quote for the procurement of goods or services, each quote request containing one or more quote items, said system comprising:

a plurality of programmed central processing units, said units capable of communicating with each other, wherein each of said units comprises:

quote entry means for entering information regarding a quote request;

supplier identification means for identifying suppliers of a quote item; and

means for generating requests for price from identified suppliers.

47. The system of claim 46, wherein each of said units further comprise assigning means for assigning a quote to a buyer.

48. The system of claim 47, wherein each of said units further comprise means for sending a request for price to a respective supplier.

49. The system of claim 48, wherein each of said units further comprises:

means for receiving a response to a request for price from a supplier;

means for evaluating a response to a request for price; and

means for generating a report.

50. The system of claim 49, wherein each of said units further comprise means for generating an order worksheet.

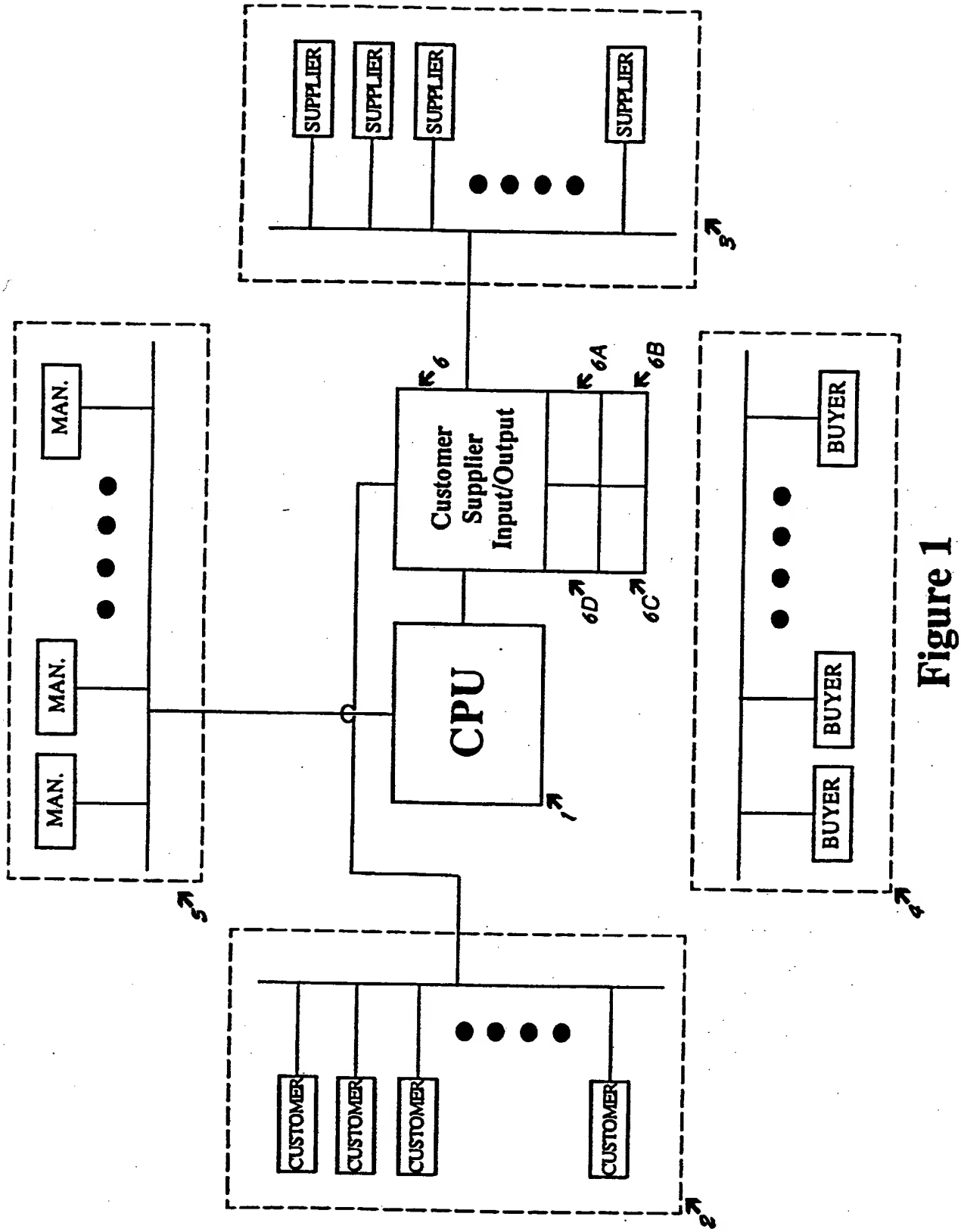

SUPPLIER
SUPPLIER
SUPPLIER
SUPPLIER
3
6
6A
6B
Customer
Supplier
Input/Output
6D
6C
CPU
1
MAN.
MAN.
MAN.
5
BUYER
BUYER
BUYER
4
CUSTOMER
CUSTOMER
CUSTOMER
CUSTOMER
2

Figure 1

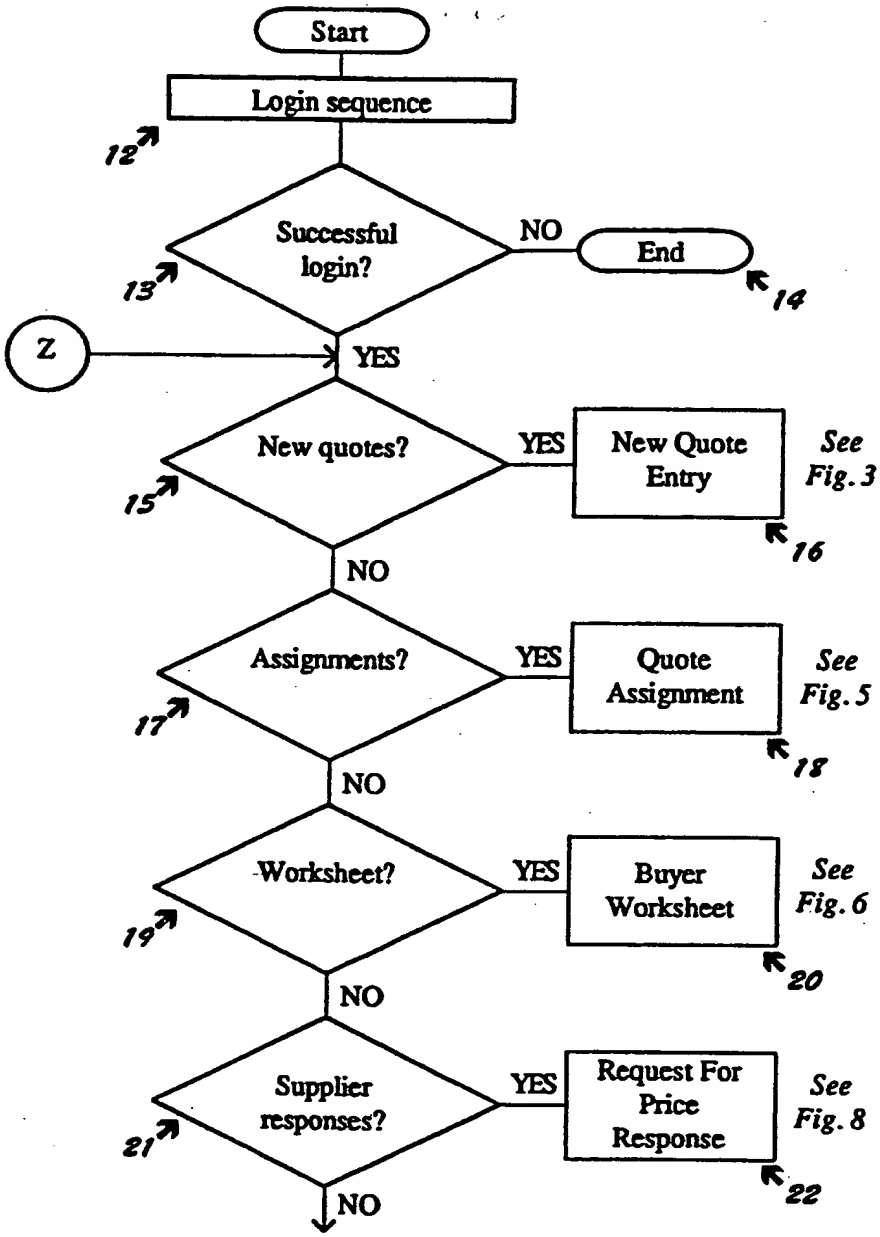

Start
Login sequence
12
Successful login?
NO
End
13
14
Z
YES
New quotes?
YES
New Quote Entry
See Fig. 3
15
16
NO
Assignments?
YES
Quote Assignment
See Fig. 5
17
18
NO
Worksheet?
YES
Buyer Worksheet
See Fig. 6
19
20
NO
Supplier responses?
YES
Request For Price Response
See Fig. 8
21
22
NO
TO FIG. 2B

Figure 2A

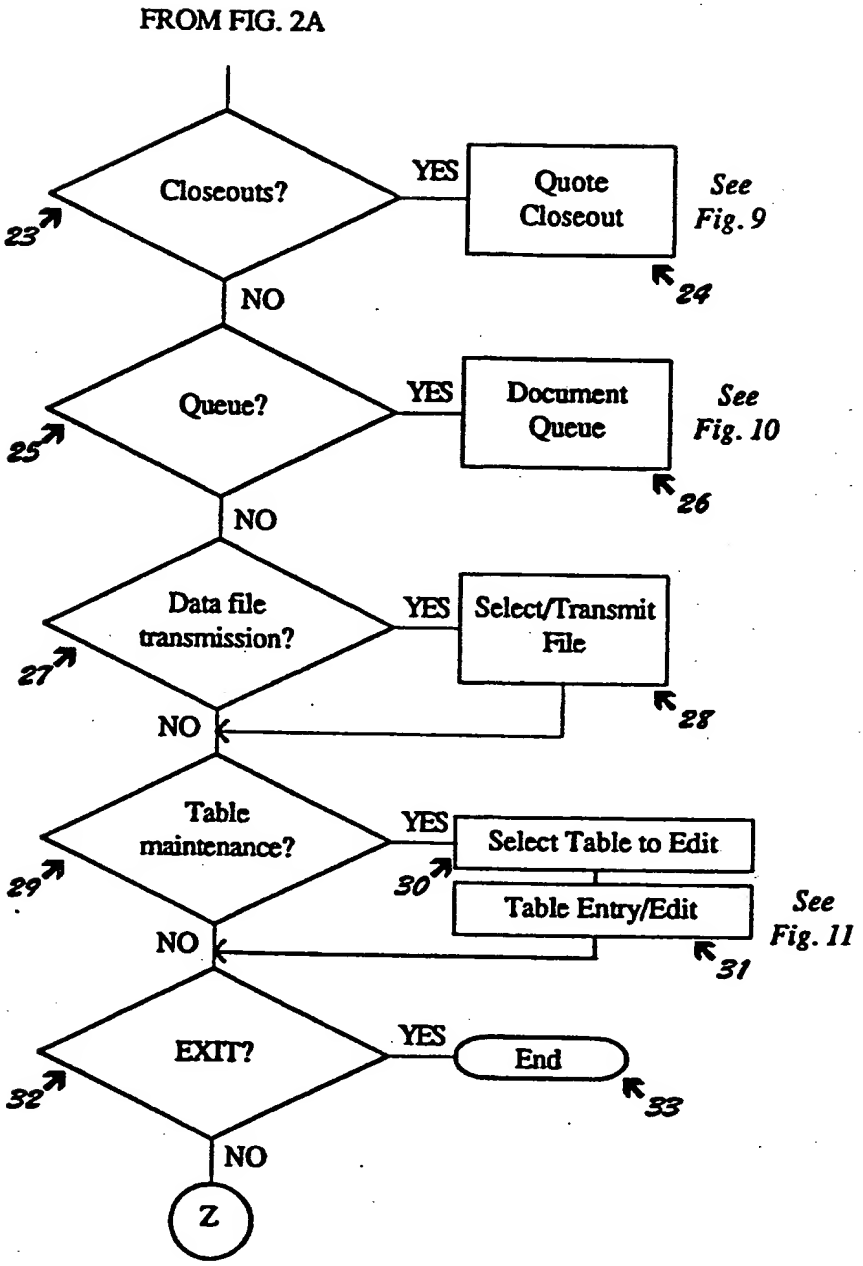

FROM FIG. 2A
Closeouts?
23
YES
Quote Closeout
24
See Fig. 9
NO
Queue?
25
YES
Document Queue
26
See Fig. 10
NO
Data file transmission?
27
YES
Select/Transmit File
28
NO
Table maintenance?
29
YES
Select Table to Edit
30
Table Entry/Edit
31
See Fig. 11
NO
EXIT?
32
YES
End
33
NO
Z

Figure 2B

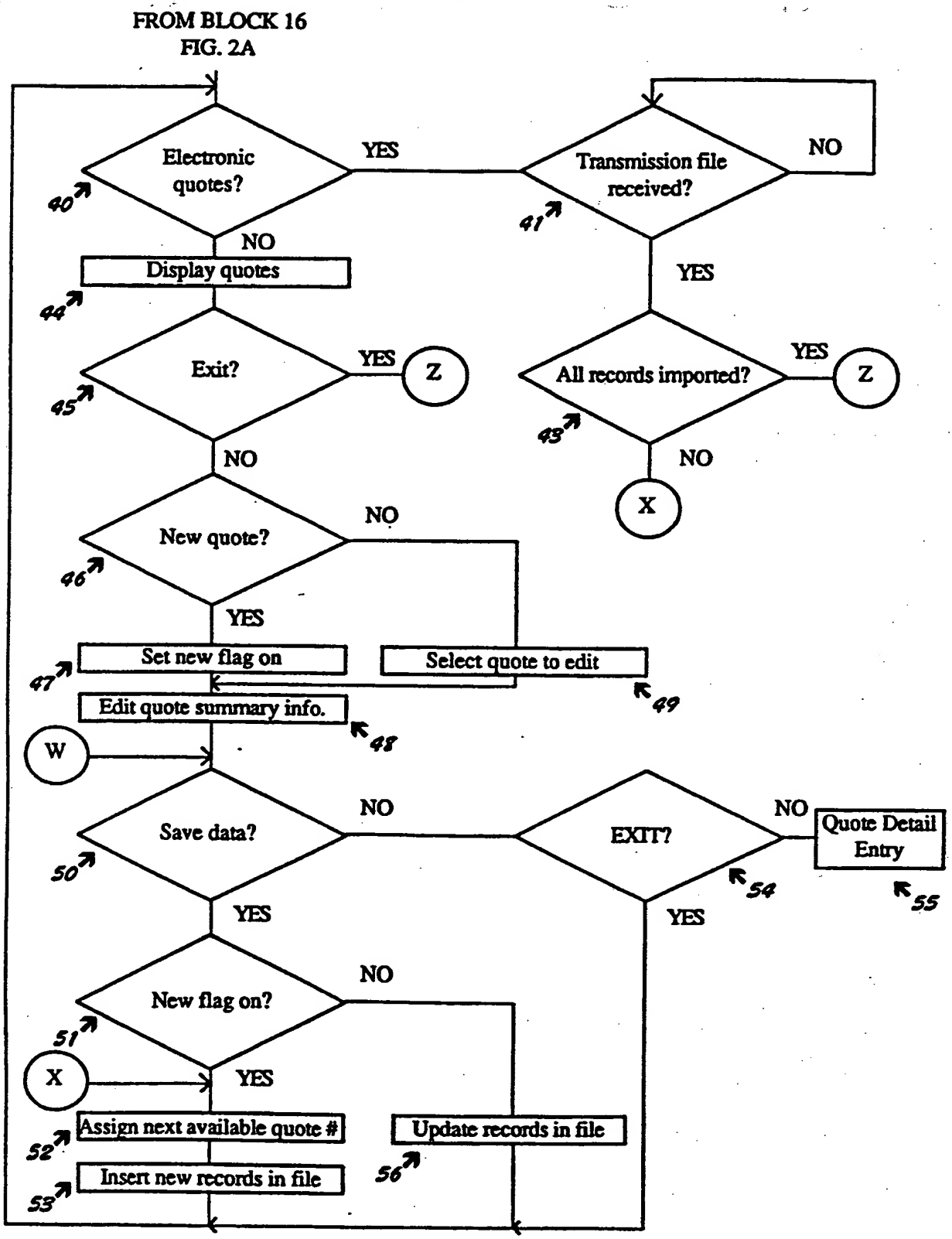
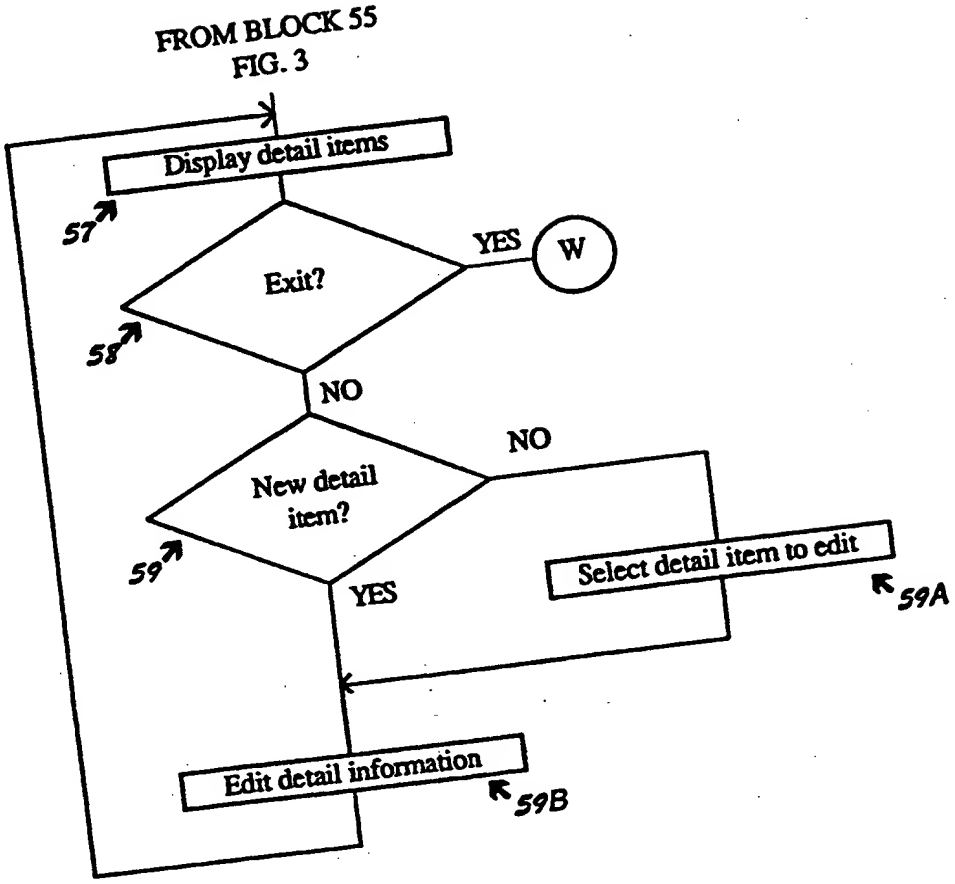

FROM BLOCK 16
FIG. 2A
Electronic quotes?
40
YES
NO
Transmission file received?
41
NO
YES
Display quotes
44
Exit?
45
YES
Z
NO
All records imported?
43
YES
Z
NO
X
New quote?
46
NO
YES
Set new flag on
47
Select quote to edit
49
Edit quote summary info.
48
W
Save data?
50
NO
YES
EXIT?
54
NO
Quote Detail Entry
55
YES
New flag on?
51
NO
X
YES
Assign next available quote #
52
Insert new records in file
53
Update records in file
56

Figure 3



BEST AVAILABLE COPY

Figure 4

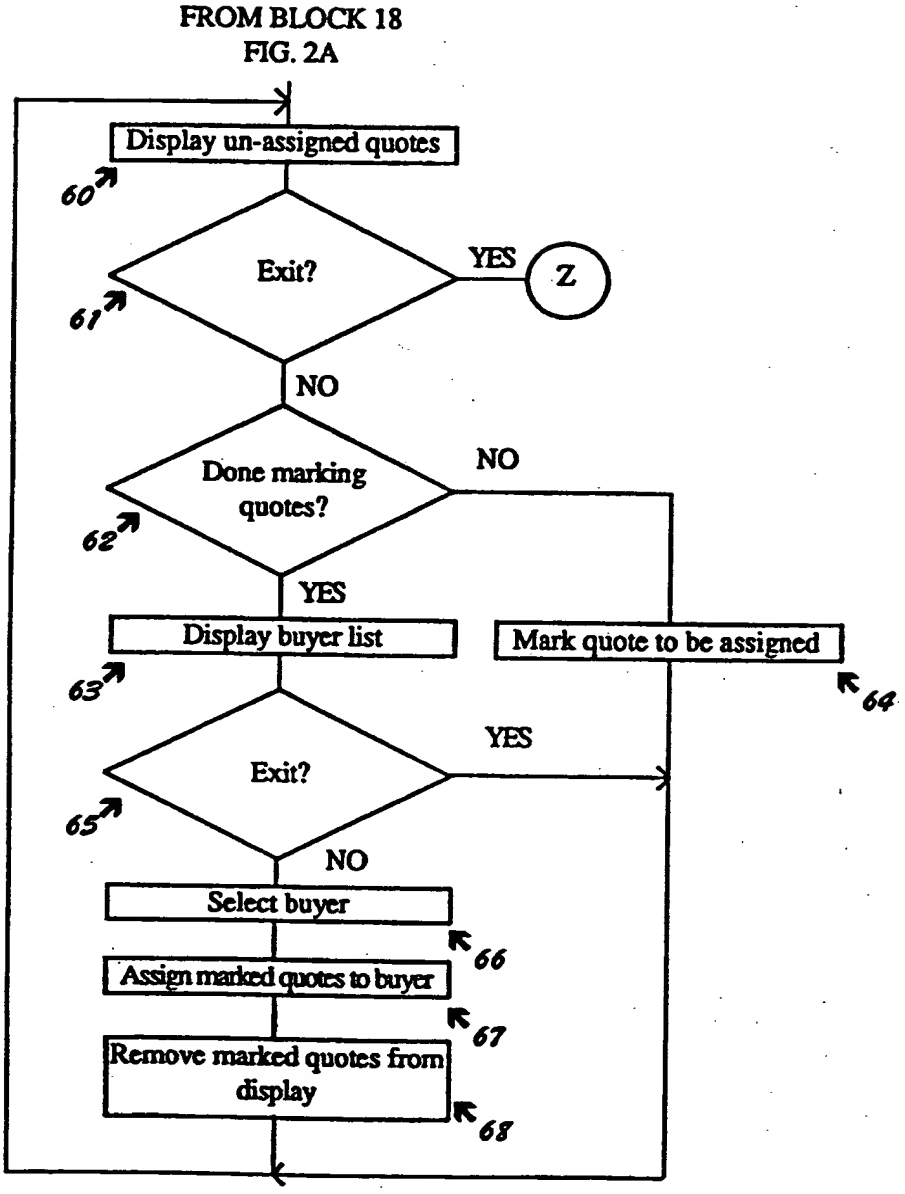

FROM BLOCK 18
FIG. 2A
Display un-assigned quotes
60
Exit?
61
YES
Z
NO
Done marking quotes?
62
NO
YES
Display buyer list
63
Mark quote to be assigned
64
Exit?
65
YES
NO
Select buyer
66
Assign marked quotes to buyer
67
Remove marked quotes from display
68

Figure 5

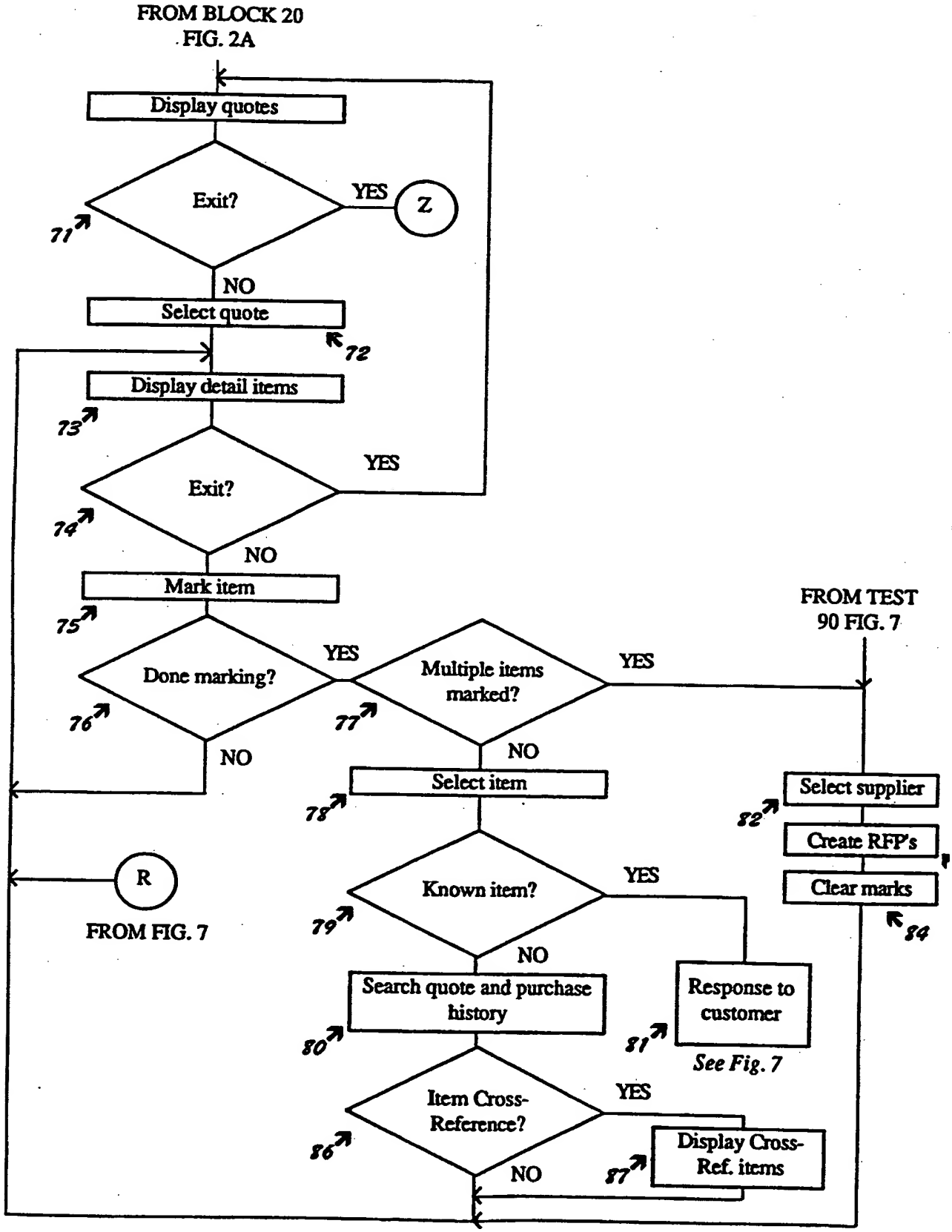

FROM BLOCK 20
FIG. 2A
Display quotes
Exit?
YES
Z
71
NO
Select quote
72
Display detail items
73
Exit?
YES
74
NO
Mark item
75
Done marking?
YES
76
NO
Multiple items marked?
YES
77
NO
Select item
78
Known item?
YES
79
NO
Search quote and purchase history
80
Item Cross-Reference?
YES
86
NO
Display Cross-Ref. items
87
Response to customer
81
See Fig. 7
FROM TEST 90 FIG. 7
Select supplier
82
Create RFP's
Clear marks
84
R
FROM FIG. 7

Figure 6

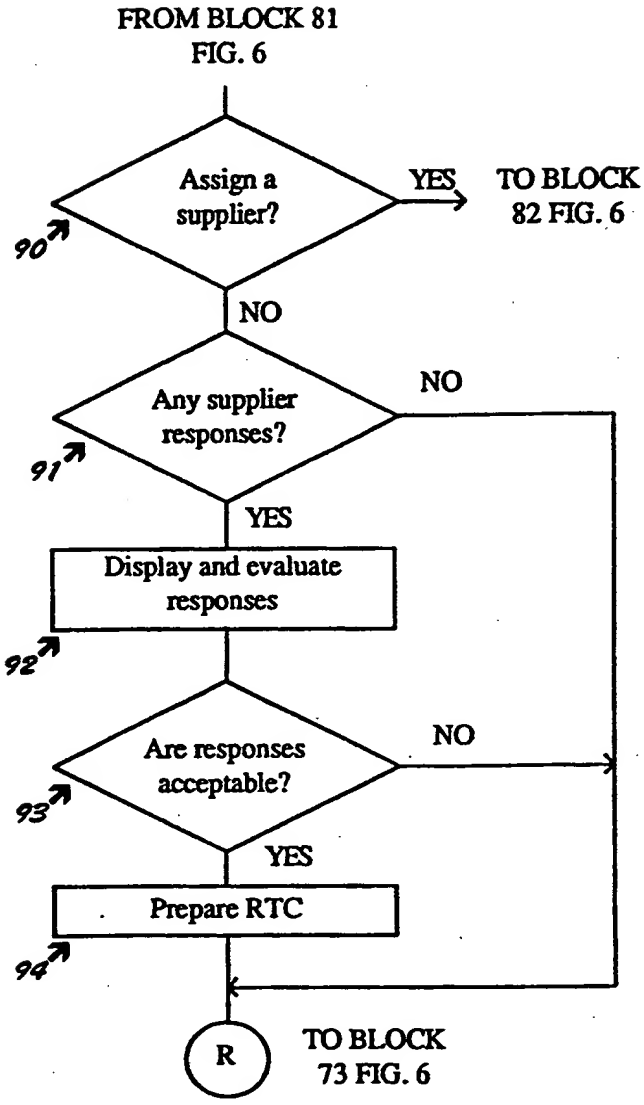


Figure 7

BEST AVAILABLE COPY

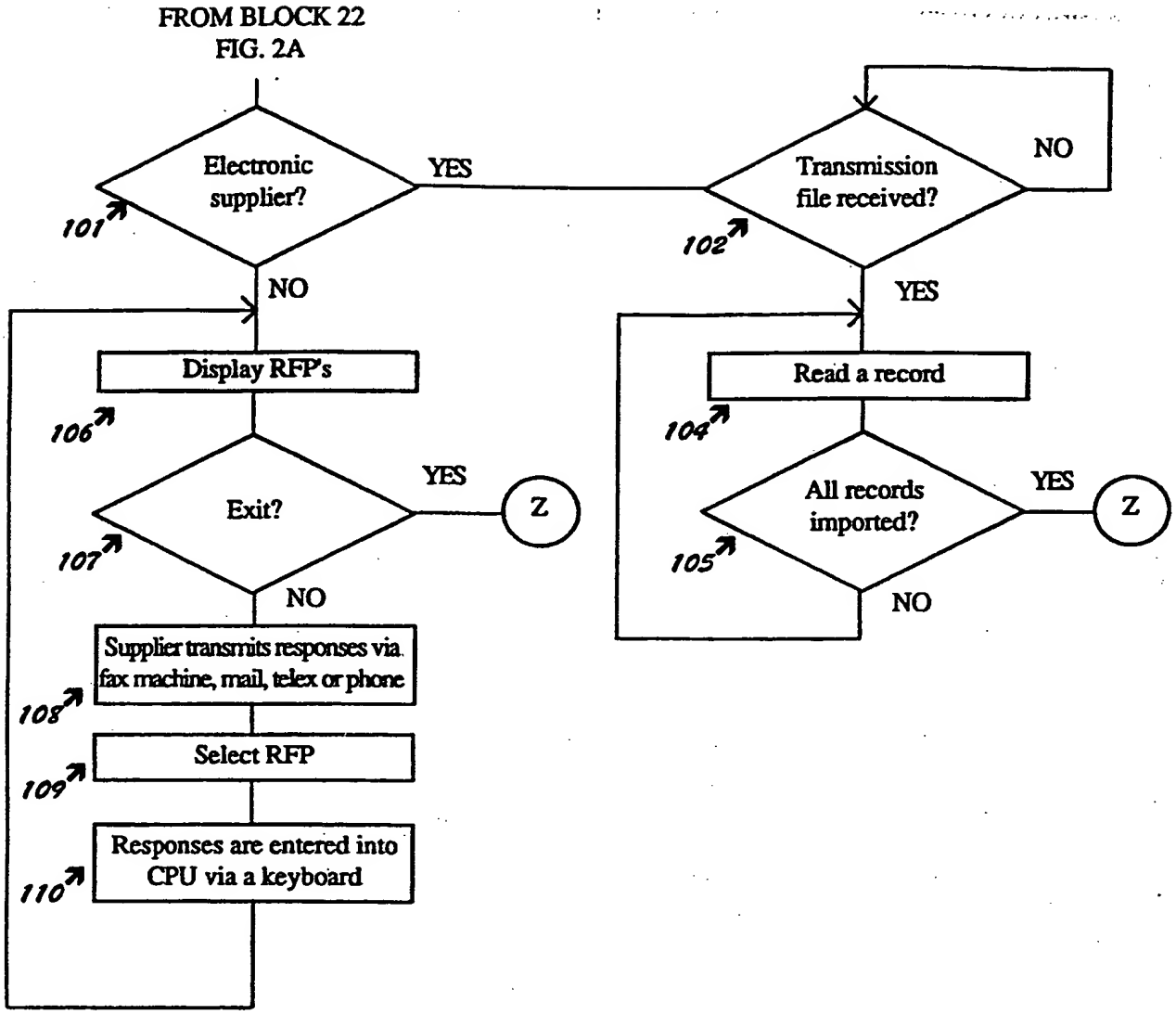

FROM BLOCK 22
FIG. 2A
Electronic supplier?
101
YES
NO
Transmission file received?
102
NO
YES
Display RFP's
106
Read a record
104
Exit?
107
YES
Z
All records imported?
105
YES
Z
NO
NO
Supplier transmits responses via fax machine, mail, telex or phone
108
Select RFP
109
Responses are entered into CPU via a keyboard
110

Figure 8

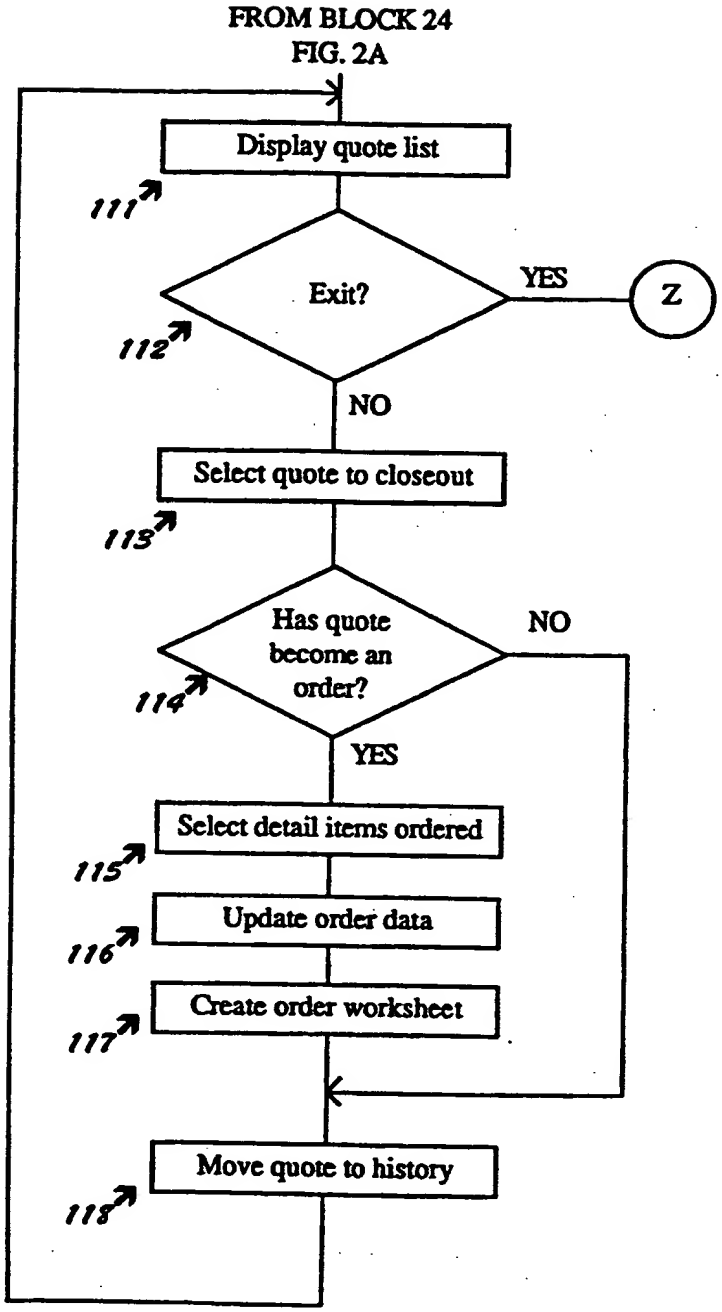

FROM BLOCK 24
FIG. 2A
Display quote list
111
Exit?
YES
Z
112
NO
Select quote to closeout
113
Has quote become an order?
NO
114
YES
Select detail items ordered
115
Update order data
116
Create order worksheet
117
Move quote to history
118

Figure 9

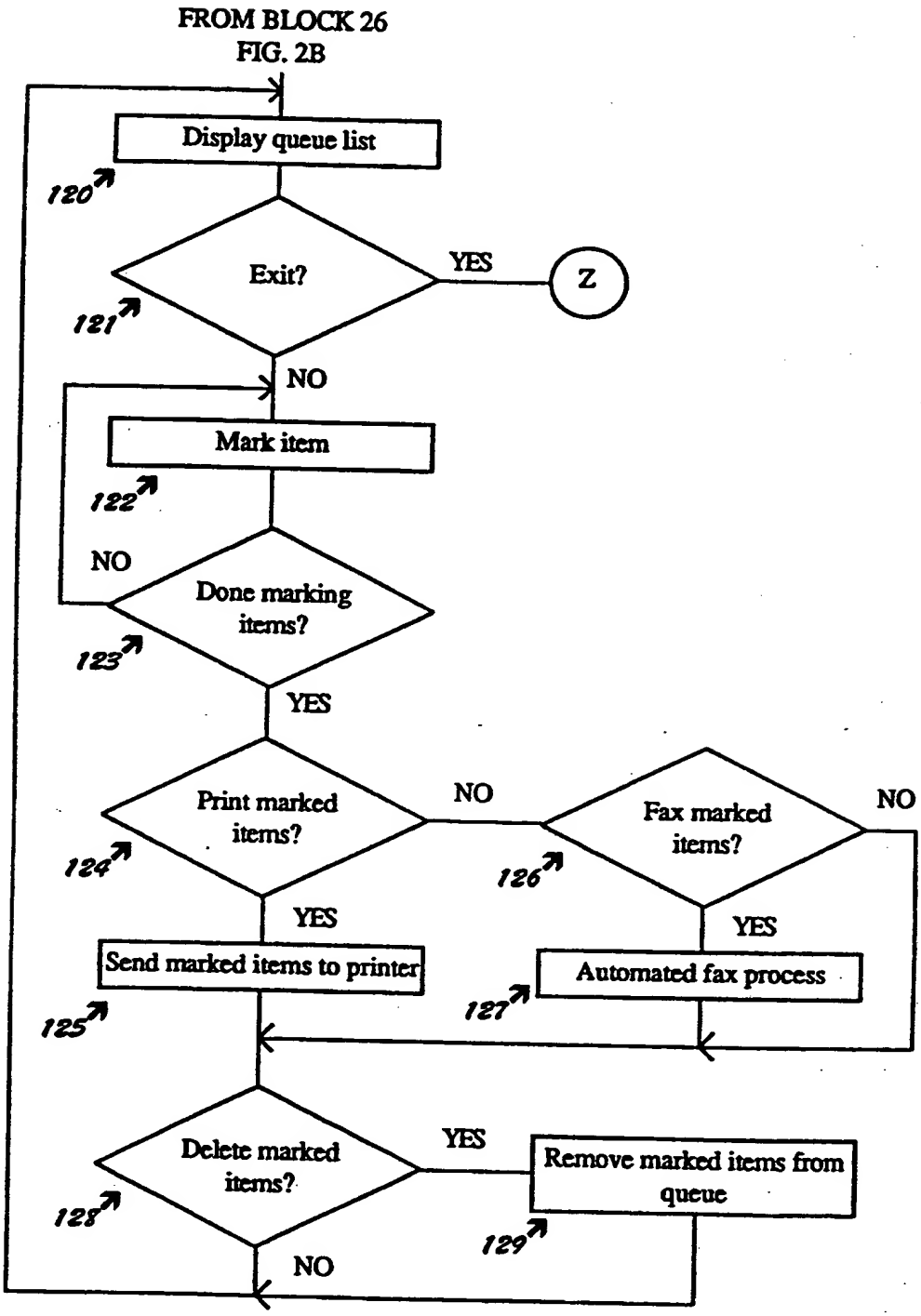

FROM BLOCK 26
FIG. 2B
Display queue list
120
Exit?
121
YES
Z
NO
Mark item
122
NO
Done marking items?
123
YES
Print marked items?
124
NO
Fax marked items?
126
NO
YES
YES
Send marked items to printer
125
Automated fax process
127
Delete marked items?
128
YES
Remove marked items from queue
129
NO

Figure 10

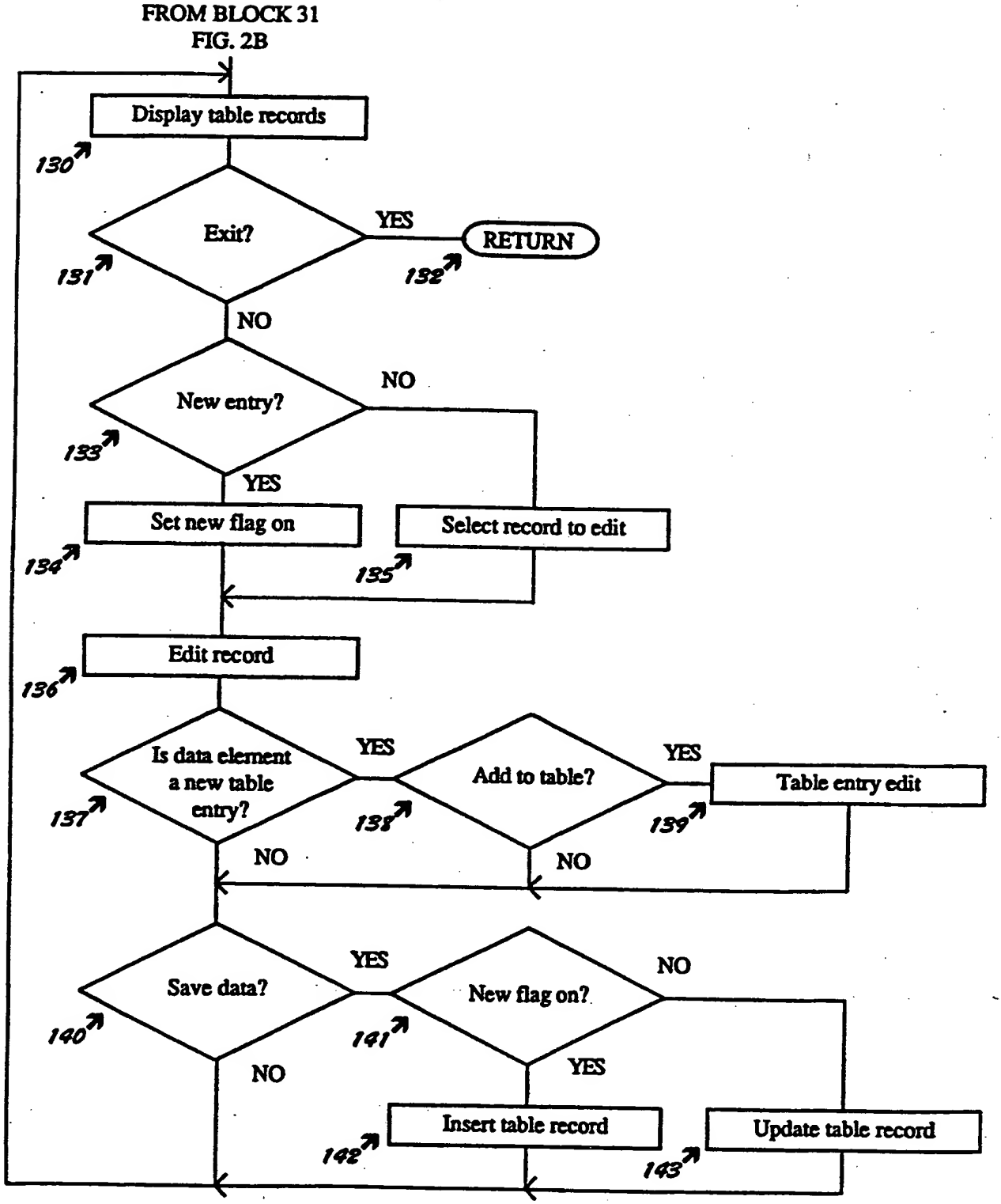

FROM BLOCK 31
FIG. 2B
Display table records
130
Exit?
131
YES
RETURN
132
NO
New entry?
133
NO
YES
Set new flag on
134
Select record to edit
135
Edit record
136
Is data element a new table entry?
137
YES
Add to table?
138
YES
Table entry edit
139
NO
NO
Save data?
140
YES
New flag on?
141
NO
YES
NO
Insert table record
142
Update table record
143

Figure 11

INTERNATIONAL SEARCH REPORT

International application No.
PCT/US93/04733

A. CLASSIFICATION OF SUBJECT MATTER

IPC(5) :G06F 15/22, 15/24
US CL :364/401

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

U.S. : 364/403, DIG1

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)

search terms: Procur? or purchas?
supplier #
price #

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X Y	US,A 4,992,940 (DWORKIN) 12 February 1991 See the entire document, particularly column 6 lines 26-37, and Figs. 1, 6.	1-13, 21-33 14-20, 34-40
X,E Y,E	US,A 5,224,034 (KATZ et al) 29, June 1993 See the entire document	1, 21 2-20, 22-40
A	US,A 3,801,774 (MICHAELIS et al) 02 April 1974 See the entire document.	1-40; 46-50
A	US,A 4,750,119 (COHEN et al) 07 June 1988 See the entire document	1-40;46-50

[X] Further documents are listed in the continuation of Box C. [ ] See patent family annex.

* Special categories of cited documents:

"A" document defining the general state of the art which is not considered to be part of particular relevance

"E" earlier document published on or after the international filing date

"L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)

"O" document referring to an oral disclosure, use, exhibition or other means

"P" document published prior to the international filing date but later than the priority date claimed

"T" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention

"X" document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone

"Y" document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art

"&" document member of the same patent family

Date of the actual completion of the international search	Date of mailing of the international search report
24 AUGUST 1993	08 OCT 1993
Name and mailing address of the ISA/US Commissioner of Patents and Trademarks Box PCT Washington, D.C. 20231 Facsimile No. NOT APPLICABLE	Authorized officer RO, BENTSU Bentsu Ro Telephone No. (703) 308-3656

Form PCT/ISA/210 (second sheet)(July 1992)*

BEST AVAILABLE COPY

INTERNATIONAL SEARCH REPORT

International application No.
PCT/US93/04733

C (Continuation). DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
Y	US,A 4,887,208 (SCHNEIDER et al) 12 December 1989. See the entire document.	46-50
A	US,A 4,959,530 (O'Connor) 25 September 1990 See the entire document.	1-40;46-50

Form PCT/ISA/210 (continuation of second sheet)(July 1992)*

BEST AVAILABLE COPY

INTERNATIONAL SEARCH REPORT

International application No.
PCT/US93/04733

Box I Observations where certain claims were found unsearchable (Continuation of item 1 of first sheet)

This international report has not been established in respect of certain claims under Article 17(2)(a) for the following reasons:

1. ☐ Claims Nos.:
because they relate to subject matter not required to be searched by this Authority, namely:

2. ☐ Claims Nos.:
because they relate to parts of the international application that do not comply with the prescribed requirements to such an extent that no meaningful international search can be carried out, specifically:

3. ☐ Claims Nos.:
because they are dependent claims and are not drafted in accordance with the second and third sentences of Rule 6.4(a).

Box II Observations where unity of invention is lacking (Continuation of item 2 of first sheet)

This International Searching Authority found multiple inventions in this international application, as follows:
(Telephone Practice)

I. Claims 1-40, 46-50, drawn to a system or method for processing a procurement of items or services, classified in Class 364, subclass 401.

II. Claims 41-45, drawn to magnetic recording medium for the procurement processing system, classified in Class 360, subclass 2.

1. ☐ As all required additional search fees were timely paid by the applicant, this international search report covers all searchable claims.

2. ☐ As all searchable claims could be searched without effort justifying an additional fee, this Authority did not invite payment of any additional fee.

3. ☐ As only some of the required additional search fees were timely paid by the applicant, this international search report covers only those claims for which fees were paid, specifically claims Nos.:

4. ☒ No required additional search fees were timely paid by the applicant. Consequently, this international search report is restricted to the invention first mentioned in the claims; it is covered by claims Nos.:
claims 1-40, 46-50

Remark on Protest

☐ The additional search fees were accompanied by the applicant's protest.

☐ No protest accompanied the payment of additional search fees.

BEST AVAILABLE COPY